

Amendments to the Claims

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (canceled)

2. (currently amended) The system of Claim [1] 24 wherein the microprocessor is further configured to display on [a] the display device any one or more of: an angiographic image, ~~the reconstruction of the arterial tree, or the~~ three dimensional reconstruction of the artery and metrological measurements on the three dimensional reconstruction of the artery.

3. (canceled)

4. (currently amended) The system of Claim [1] 24 wherein the microprocessor is further configured to make ~~meterological~~ metrological measurements on ~~the reconstruction of the arterial tree or~~ the reconstruction of the artery.

5. (currently amended) The system according to Claim [3] 24 wherein the microprocessor is further configured to manipulate an image on the display.

6. (canceled)

7. (currently amended) The system of Claim [3] 2 wherein the microprocessor is configured to display on the display a view of the three-dimensional reconstruction of the artery from a selected perspective, such as a cross sectional perspective.

8. (currently amended) The system of Claim [3] 24 wherein the three-dimensional reconstruction of the artery is displayed on

the display device embedded in the three-dimensional display of the arterial tree.

9. (canceled)

10. (currently amended) The method of Claim [9] 31 further comprising ~~a step of displaying on a display~~ any one or more of an angiographic image, ~~the reconstruction of the arterial tree,~~ or the three-dimensional reconstruction of the artery and metrological measurements on the three dimensional reconstruction of the artery.

11. (currently amended) The method of Claim [9] 31 further comprising ~~a step of making meterological performing metrological~~ measurements on the ~~reconstruction of the arterial tree or the~~ three-dimensional reconstruction of the artery.

12. (currently amended) The method according to Claim 10 further comprising ~~a step of~~ manipulating an image on the display.

13. (canceled)

14. (currently amended) The method of Claim 10 further comprising ~~a step of displaying on the display~~ a view of the three-dimensional reconstruction of the artery from a selected perspective, such as a cross sectional perspective.

15. (currently amended) The method of Claim [14] 31 wherein the three-dimensional reconstruction of the artery is displayed on the display device embedded in the three-dimensional display of the arterial tree.

16 and 17. (canceled)

18. (currently amended) The method according to Claim ~~16 or 17~~ 31 wherein the arterial tree is selected from the group comprising the coronary arterial tree, the renal arterial tree, the pulmonary arterial tree, the cerebral arterial tree, and the hepatic arterial tree.

19. (currently amended) The method according to Claim [17] 33 wherein the stenotic artery has a lumen, the lumen has a cross-section of maximal narrowing, the cross-section of maximal narrowing has a fraction occluded by plaque, and determining the severity of the stenosis includes determining the fraction of the cross-section of maximal narrowing occluded by plaque.

20 to 23. (canceled)

24. (New) A system for imaging an artery contained in an arterial tree, the system comprising:

a processor adapted for coupling to a display device for displaying on said display device at least two angiographic images of the arterial tree from different perspectives;

said processor being responsive to an artery of interest in the displayed angiographic images for generating a three dimensional reconstruction of the artery of interest from at least one of the displayed angiographic images.

25. (New) The system according to claim 4, wherein the artery of interest is a stenotic artery and the metrological measurements include a severity and length of stenosis of the artery.

26. (New) The system according to claim 24, wherein the processor is adapted to be coupled to a manual selection device for selecting the artery of interest manually.

27. (New) The system according to claim 24, wherein the processor is responsive to an additional perspective being selected for updating the reconstruction of the artery of interest for display by the display device.

28. (New) The system according to claim 28, wherein:

the processor is responsive to one or more manual operator commands for image processing the reconstructed artery for display on the display device.

29. (New) A system for imaging an artery contained in an arterial tree, the system comprising:

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10 a display device for displaying at least two angiographic images of the arterial tree from different perspectives;

a selection device for selecting an artery of interest in the displayed angiographic images;

a processor coupled to the display device and to the selection device for generating a three dimensional reconstruction of the artery of interest from at least one of the displayed angiographic images.

30. (New) The system according to claim 29, wherein the selection device is a manual operator control.

31. (New) A method for imaging an artery contained in an arterial tree, the method comprising:

displaying at least two angiographic images of the arterial tree from different perspectives;

selecting an artery of interest in the displayed angiographic images;

generating a three dimensional reconstruction of the artery of interest from at least one of the displayed angiographic images; and

displaying the three dimensional reconstruction of the artery of interest.

32. (New) The method according to claim 31, wherein the artery of interest is a stenotic artery.

33. (New) The method according to claim 32, the method further comprising analyzing the three-dimensional reconstruction of the artery to determine a severity and length of stenosis of the artery.

34. (New) A program storage device readable by machine, tangibly embodying a program of instructions executable by the machine to perform method steps for imaging an artery contained in an arterial tree, the method comprising:

displaying at least two angiographic images of the arterial tree from different perspectives;

selecting an artery of interest in the displayed angiographic images;

generating a three dimensional reconstruction of the artery of interest from at least one of the displayed angiographic images; and

displaying the three dimensional reconstruction of the artery of interest.

35. (New) A computer program product comprising a computer useable medium having computer readable program code embodied therein for imaging an artery contained in an arterial tree, the computer program product comprising:

computer readable program code for causing the computer to display at least two angiographic images of the arterial tree from different perspectives;

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computer readable program code for causing the computer to select an artery of interest in the displayed angiographic images;

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computer readable program code for causing the computer to generate a three dimensional reconstruction of the artery of interest from at least one of the displayed angiographic images; and

computer readable program code for causing the computer to display the three dimensional reconstruction of the artery of interest.
